

FIG. 1

complementSoft ASAP  
Architecture Overview

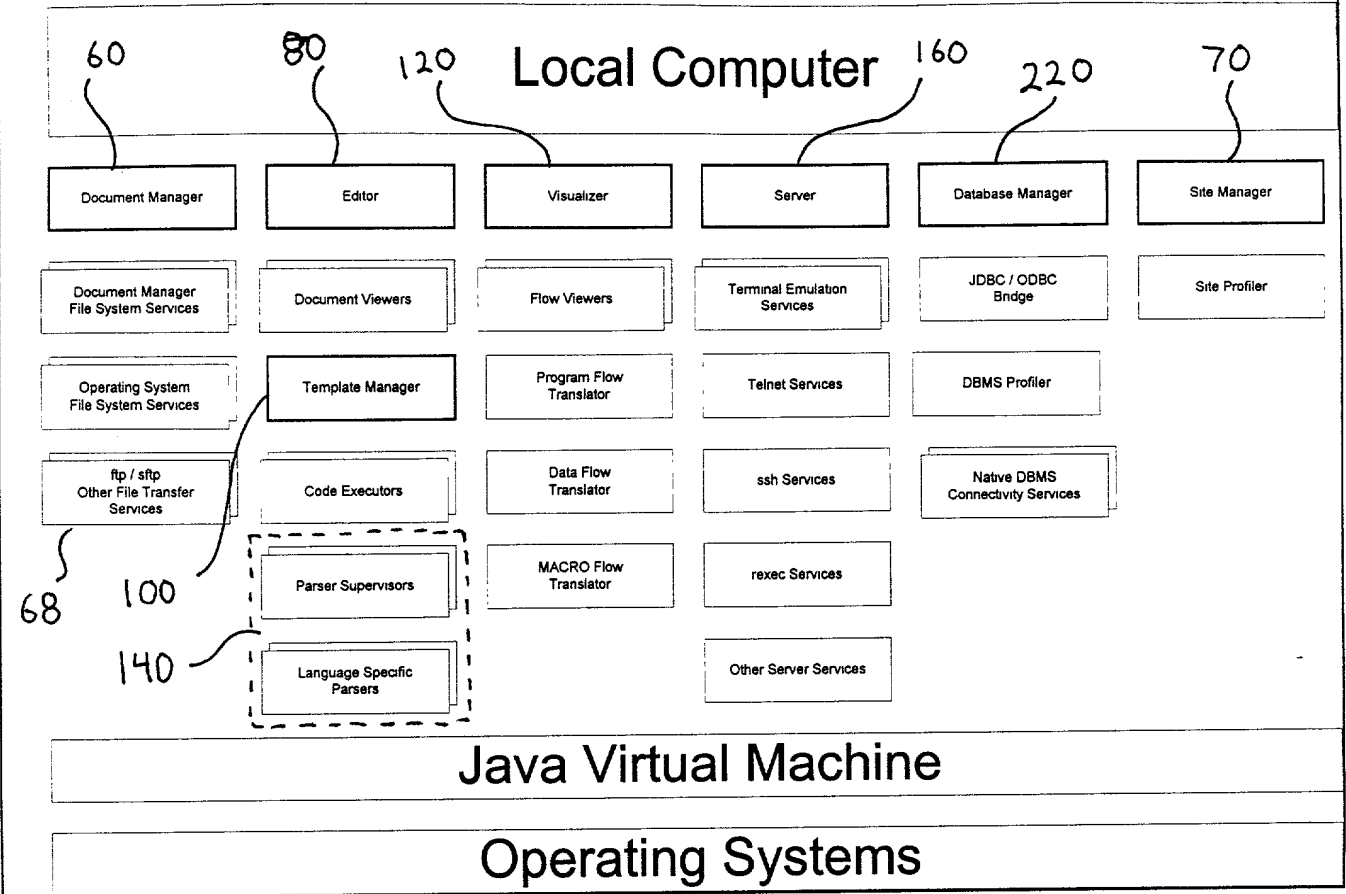
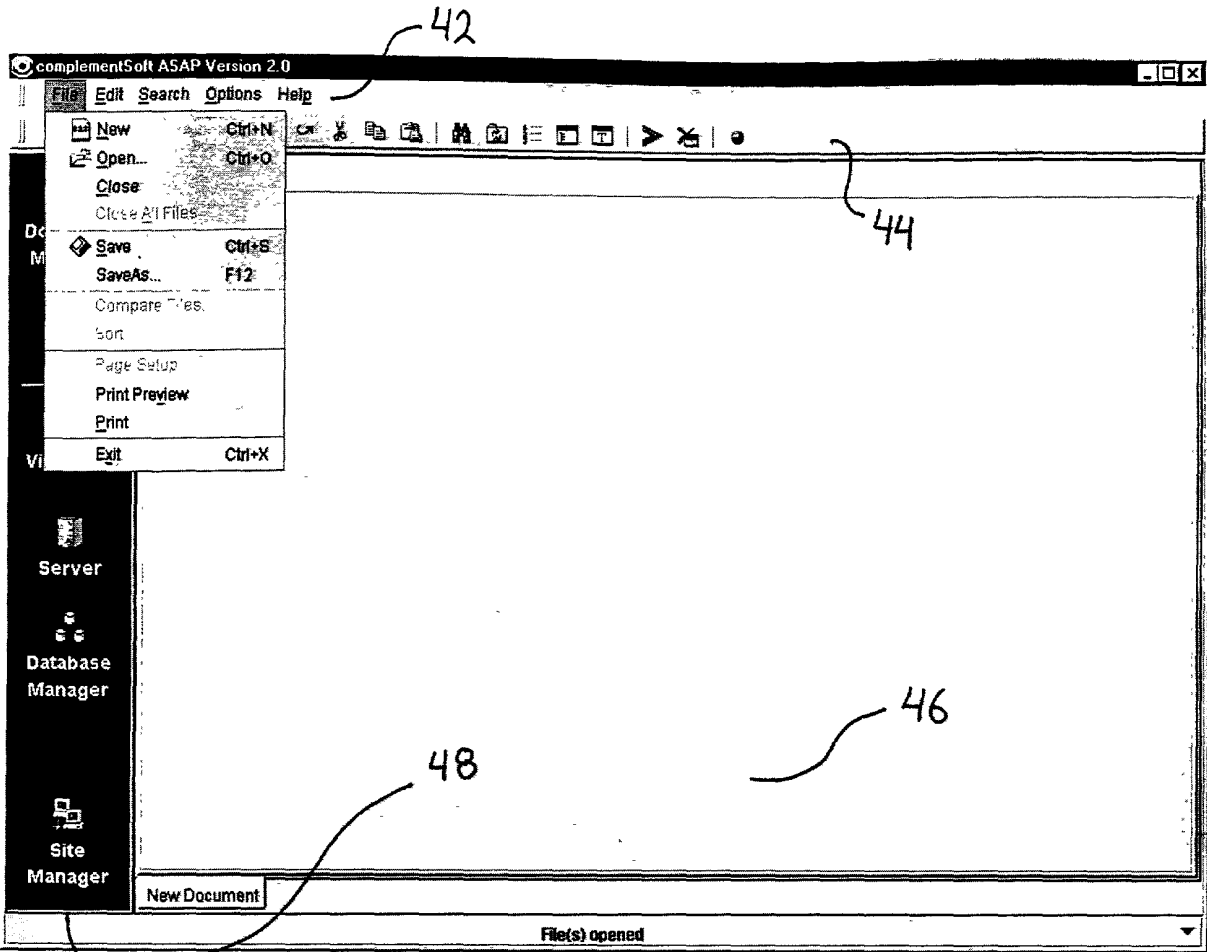


FIG. 2

T. O. S. T. H. A. S. E. S. O.



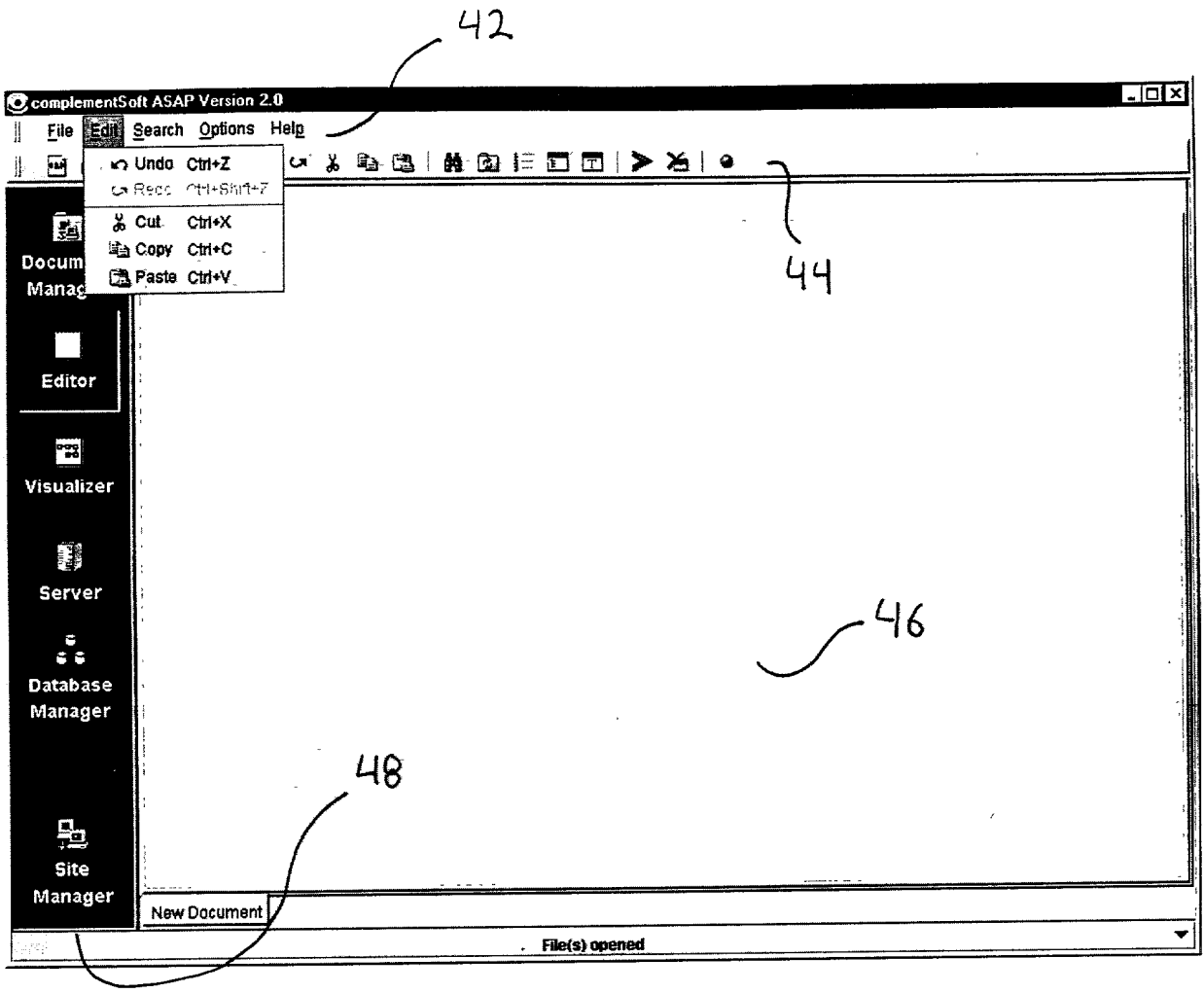
TOP SECRET 4256560



Menu Item	Functionality
New	Create a new document ( a program )
Open	Open an existing document
Close	Close the currently opened document
Save	Save the currently open document
Save As	Save the currently open document using a different name or in a different location
Print Preview	Print Preview of the currently open (active) document
Print	Print the currently open (active) document
Exit	Exit the application

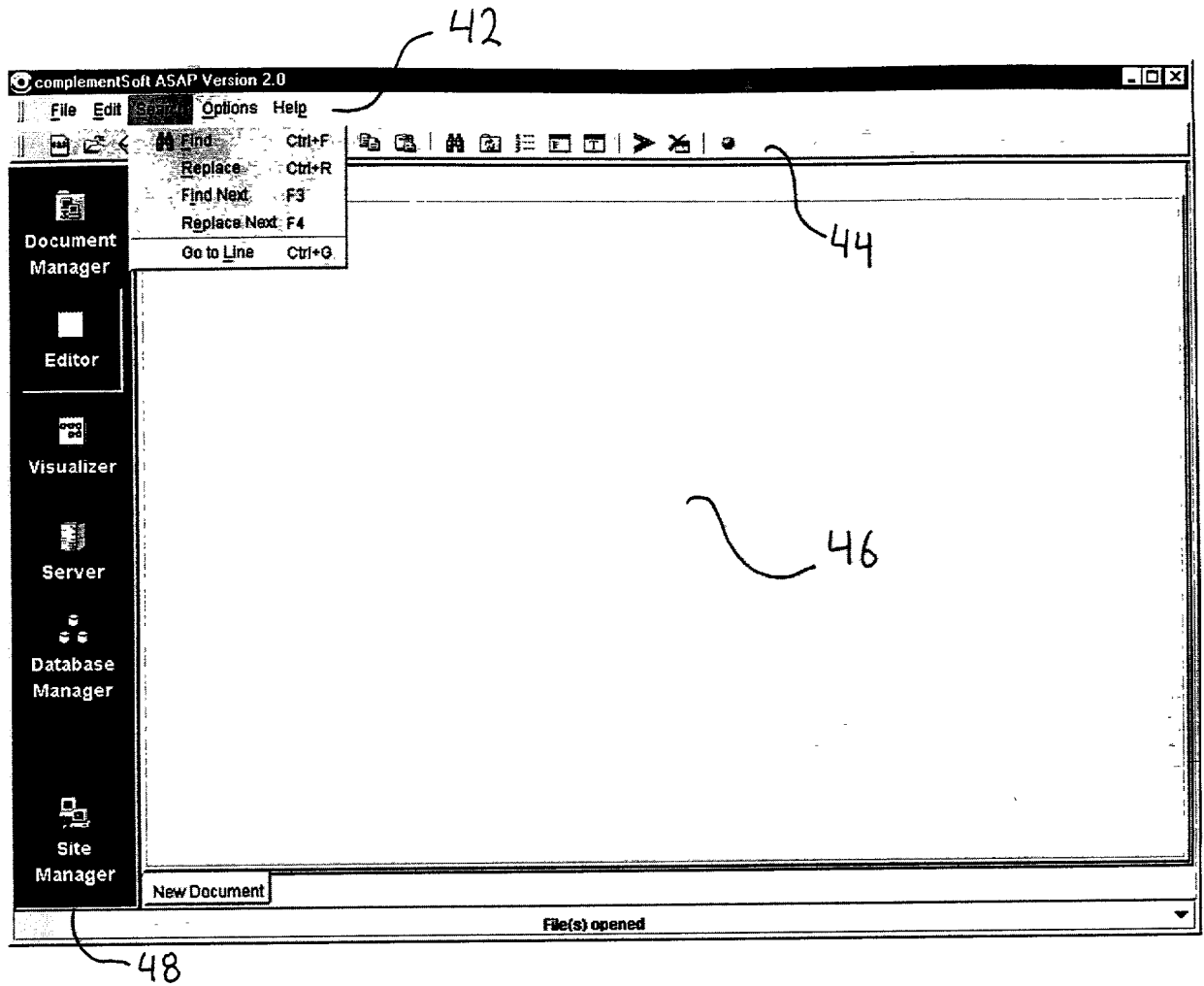
FIG. 4a

406177 "42326660"



Menu Item	Functionality
Undo	
Redo	
Cut	
Copy	
Paste	

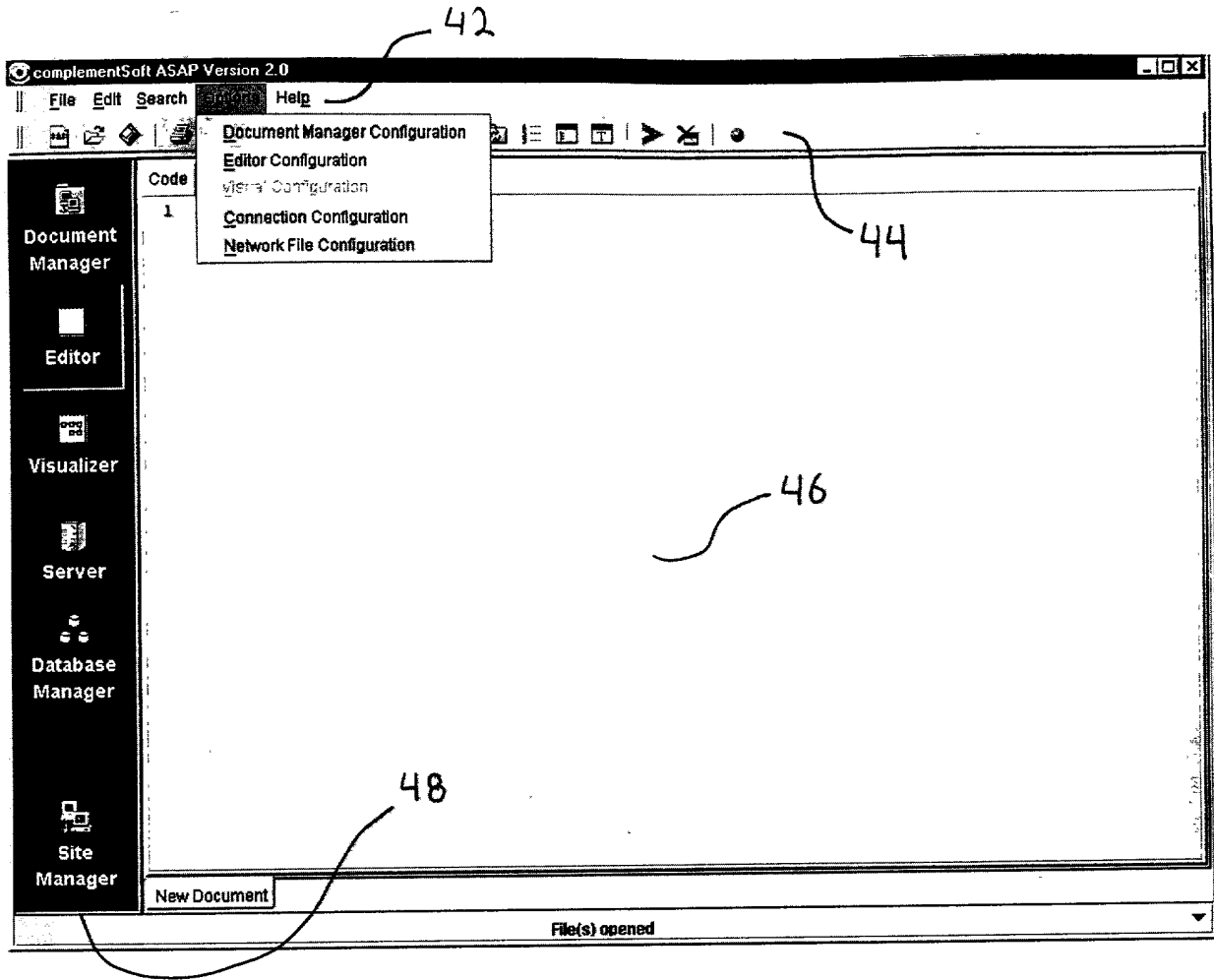
FIG. 4b



Menu Item	Functionality
Find	
Replace	
Find Next	
Replace Next	
Goto Line	Go to the n line in the currently active document

FIG. 4c

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Menu Item	Functionality
Document Manager Configuration	Activate the Document Manager Configurator
Editor Configuration	Activate the Editor Configurator
Visual Configuration	Activate the Visual Configurator
Connection Configuration	Activate the Connection Configurator
Network File Configuration	Activate the Network File Configurator

FIG. 4d

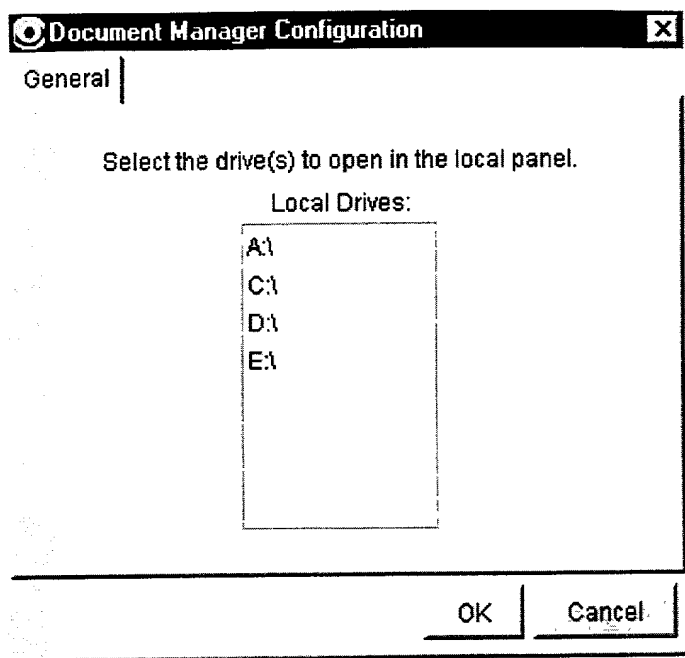


Figure 4da



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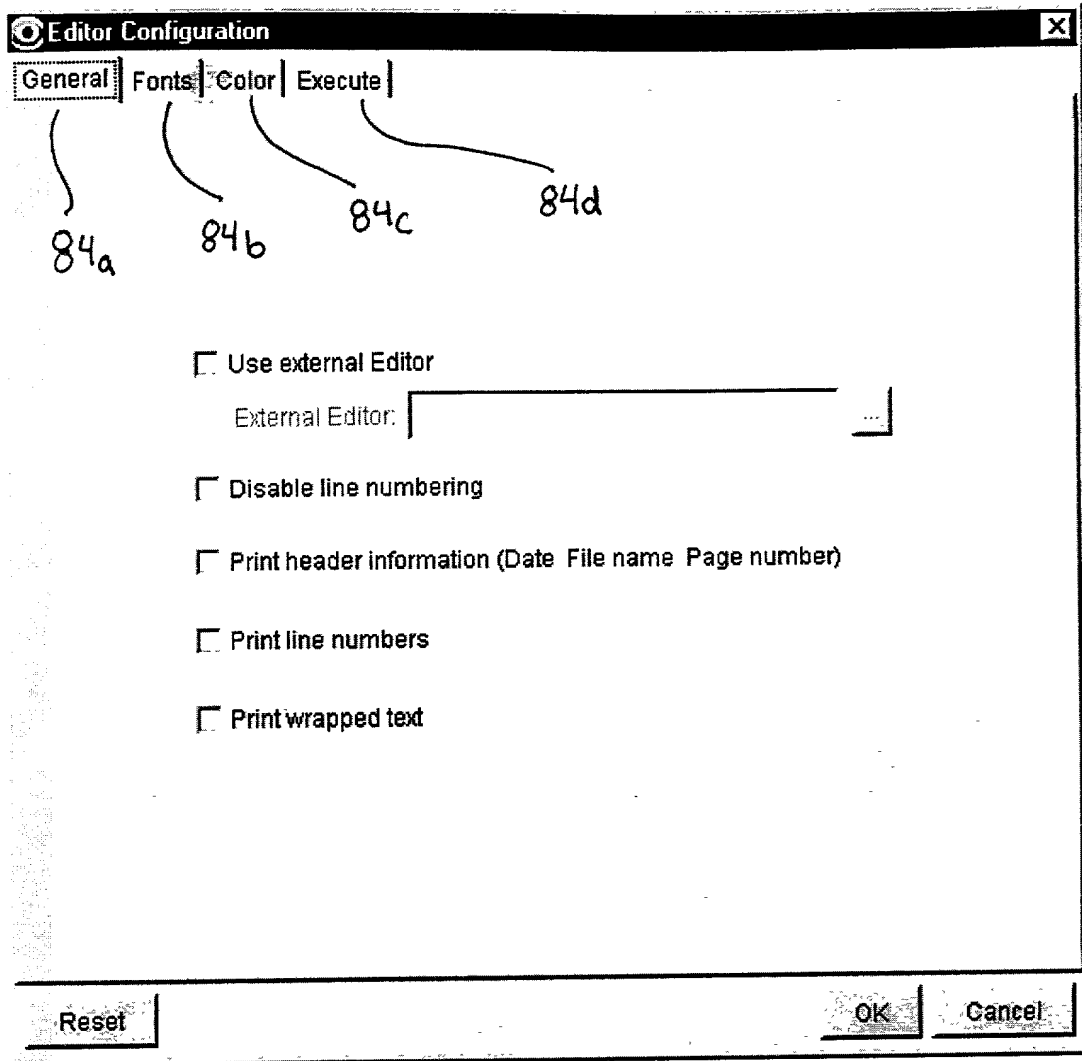


Figure 4db

FOI b7E b7C b7D

**Site Manager Configuration** [X]

**Connection**

No proxies     Firewall with no proxies  
 Use proxies     No network detection

Enable HTTP proxy

HTTP Proxy

Server Name: \_\_\_\_\_ Server Port: 80

Enable SOCKS proxy

SOCKS Proxy

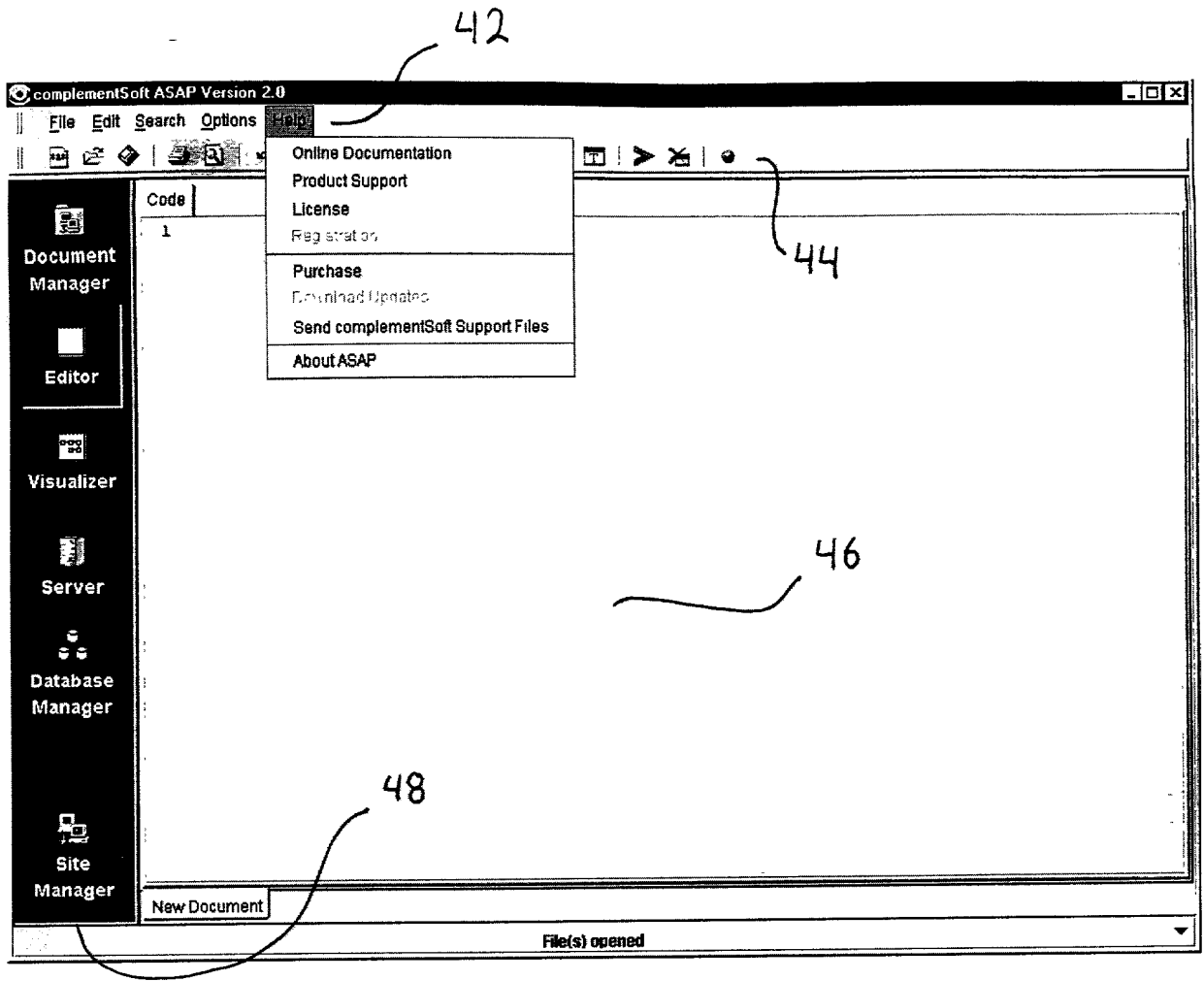
Server Name: \_\_\_\_\_ Server Port: 1080

Ver 4     Authentication    User Name: \_\_\_\_\_  
 Ver 5    Password: \_\_\_\_\_

**Test**    **OK**    **Cancel**    **Apply**

Fig 4dc

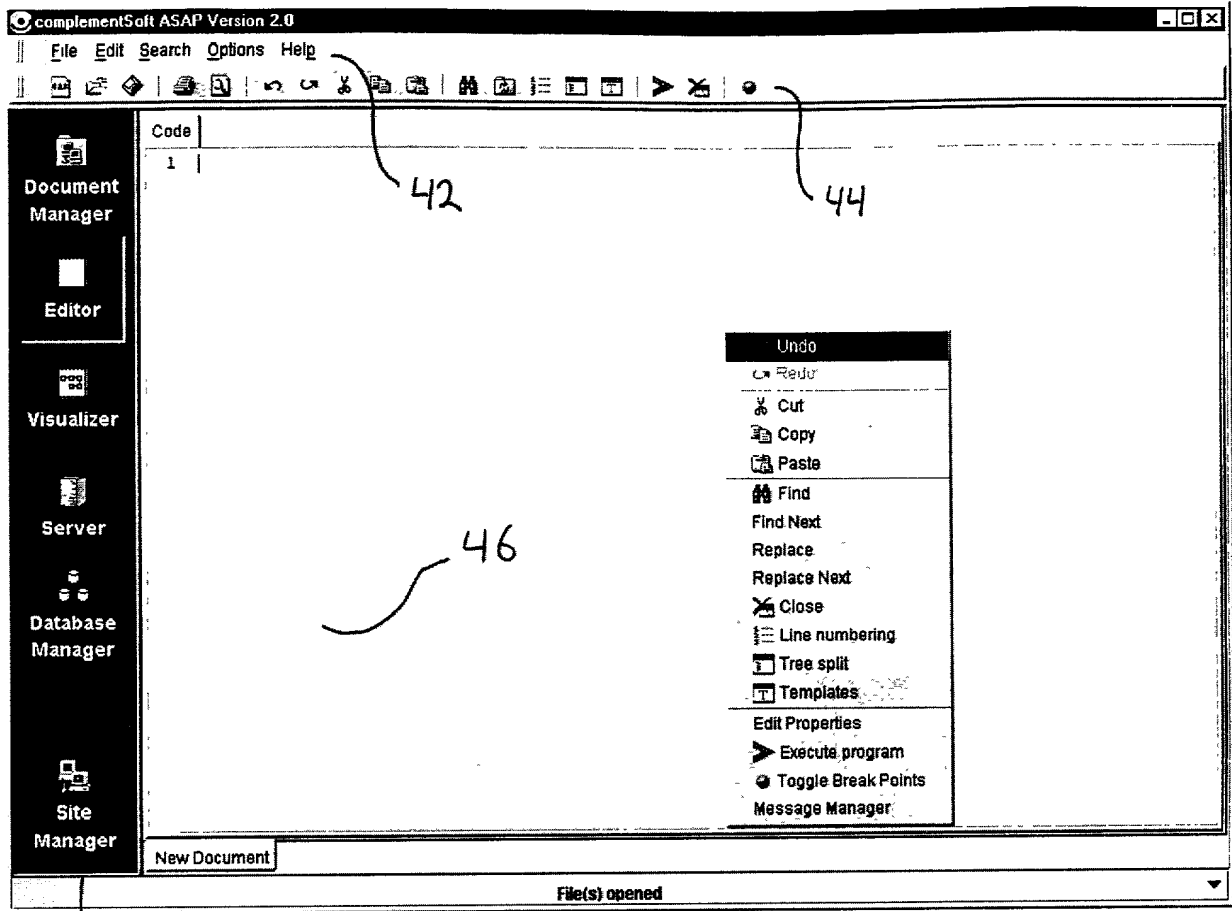




Menu Item	Functionality
On-line Documentation	Show On-line Documentation
Product Support	Displays the Product Support Page with e-mail address, How to . . . and Frequently Asked Questions
License	Detailed license information with the ability to renew and/or upgrade the license
Registration	Perform on-line product registration
Purchase	Displays the complementSoft e-store
Download Updates	Retrieve Product Updates
Send complementsoft Support files	E-mail support files to complementSoft
About ASAP	Version and copyright information

FIG. 4e

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48

FIG. 4f



44



Menu Item	Functionality
New	
Open	
Save	
Print	
Print Preview	
Undo	
Redo	
Cut	
Copy	
Paste	
Find	Find a word
Refresh	Refresh the Editor display
Toggle Line Numbers	Show or hide line numbers
Toggle Tree View	Enable or disable Tree View
Template Manager	Activate the Template manager
Execute Program	Execute the currently active program
Close	Close the currently active program
Toggle Break Point Execution	Enable of disable Break Point Execution

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FIG. 5

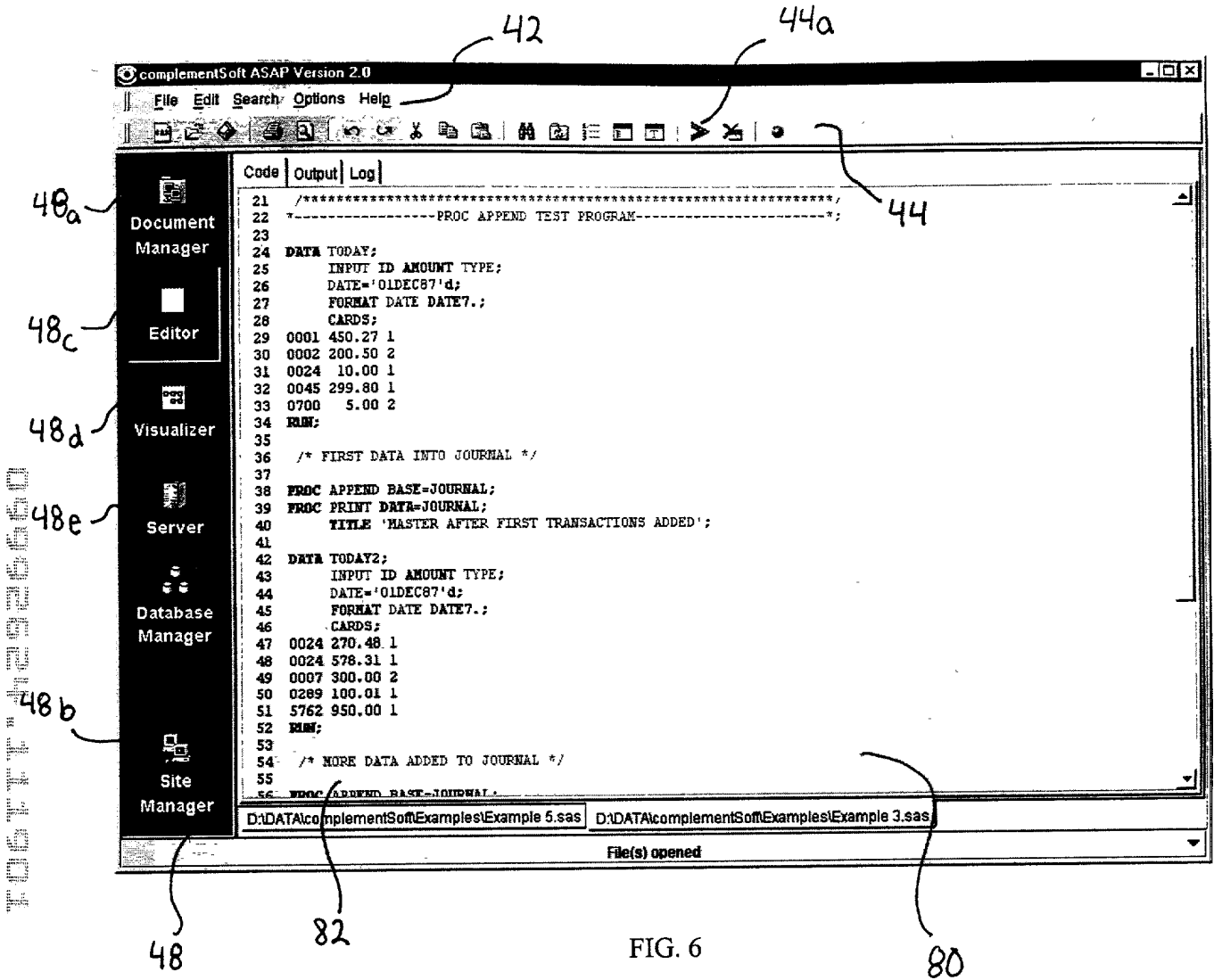


FIG. 6



42  
44  
92  
48  
82a  
80  
82b

complementSoft ASAP Version 2.0

File Edit Search Options Help

Code Output Log

D:\DATA\complementSoft\Examples\Example 5.sas

```
21 /******  
22 *-----PROC APPEND TEST PROGRAM-----*  
23  
24 DATA TODAY;  
25 INPUT ID AMOUNT TYPE;  
26 DATE='01DEC87'd;  
27 FORMAT DATE DATE7.;  
28 CARDS;  
29 0001 450.27 1  
30 0002 200.50 2  
31 0024 10.00 1  
32 0045 299.80 1  
33 0700 5.00 2  
34 RUN;  
35  
36 /* FIRST DATA INTO JOURNAL */  
37  
38 PROC APPEND BASE=JOURNAL;  
39 PROC PRINT DATA=JOURNAL;  
40 TITLE 'MASTER AFTER FIRST TRANSACTIONS ADDED';  
41  
42 DATA TODAY2;  
43 INPUT ID AMOUNT TYPE;  
44 DATE='01DEC87'd;  
45 FORMAT DATE DATE7.;  
46 CARDS;  
47 0024 270.48 1  
48 0024 578.31 1  
49 0007 300.00 2  
50 0289 100.01 1  
51 5762 950.00 1  
52 RUN;  
53  
54 /* MORE DATA ADDED TO JOURNAL */  
55  
56 PROC APPEND BASE=JOURNAL;
```

D:\DATA\complementSoft\Examples\Example 3.sas

File(s) opened

FIG. 7

Templates

File Edit Help

Local: SAS Language Elements Network

SAS Language Elements

- Format
- Informats
- Functions
- Proc
  - Aceclus
  - Anova
  - Append
  - Anma
  - Autoreg
  - BMDP
  - Boxplot
  - Calendar
  - Call
  - Cancorr
  - Candisc
  - Catalog
  - Catmod
  - Chart
  - Cimport
  - Cluster
  - Compare
  - Computab
  - Contents
  - Convert
  - Copy
  - Corr
  - Corresp
  - Cport
  - Datasets
  - Datasource

```

/* The Catalog procedure manages entries in SAS catalogs. */
/* PROC CATALOG is an interactive procedure that allows you to
- display the contents of a catalog
- copy a catalog or selected entries within a catalog
- rename, exchange, or delete entries within a catalog */
PROC CATALOG CATALOG=<libref.>catalog <ENTRYTYPE=etype> <FORCE> <KILL>;
  CONTENTS <OUT=SAS-data-set> <FILE=fileref>;
  COPY OUT=<libref.>catalog <options>; SELECT entry(s) </ ENTRYTYPE=etype>;
  EXCLUDE entry(s) </ ENTRYTYPE=etype>;

  CHANGE old-name-l=new-name-l
  <...old-name-n=new-name-n>
  </ ENTRYTYPE=etype>;
  EXCHANGE name-l=other-name-l
  <...name-n=other-name-n>
  </ ENTRYTYPE=etype>;
  DELETE entry(s)
  </ ENTRYTYPE=etype>;
  MODIFY entry
  (DESCRIPTION=<<'>entry-description<'>>)
  </ ENTRYTYPE=etype>;
  SAVE entry(s) </ ENTRYTYPE=etype>;

```

105

104

106

101a

101b

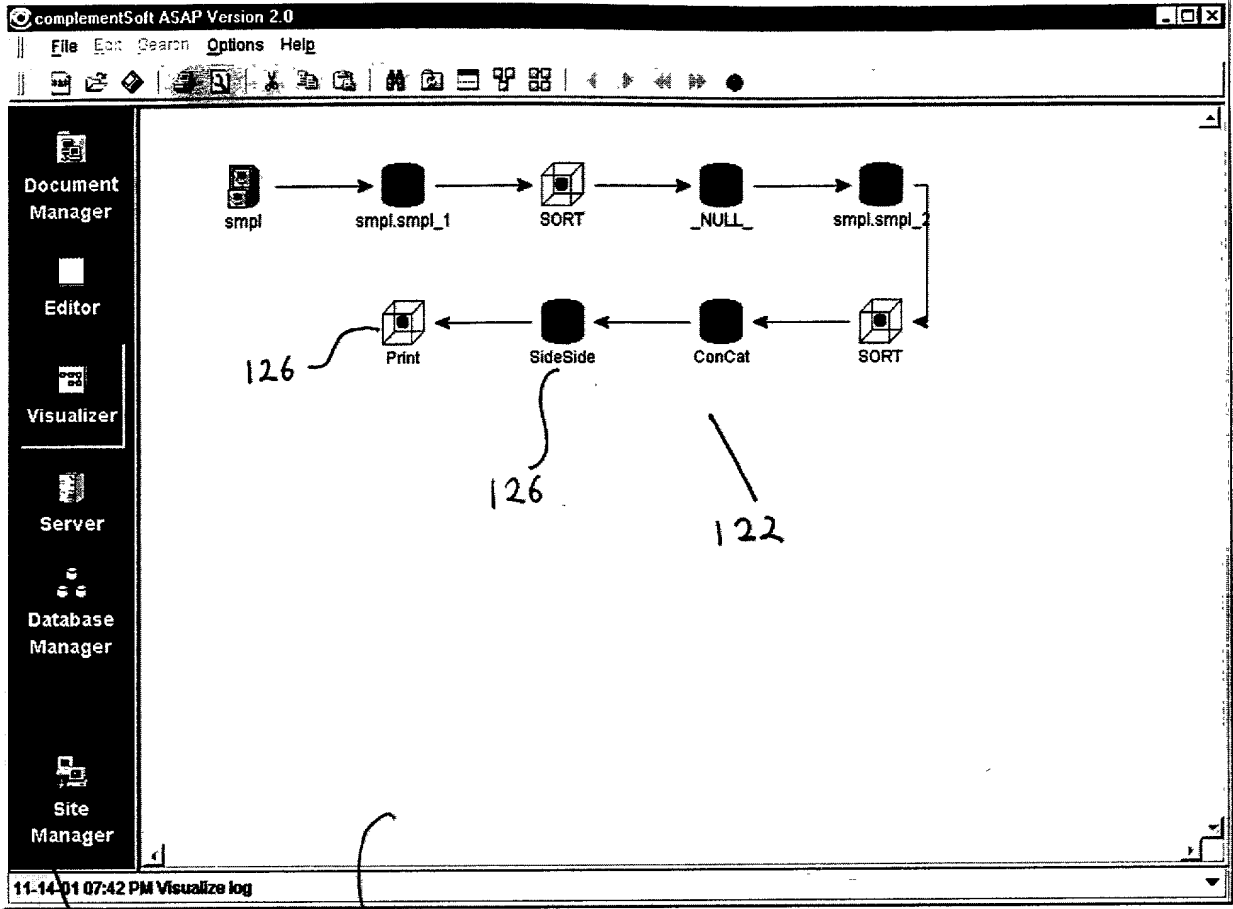
FIG. 8

100

101

106 101a 101b 100 101

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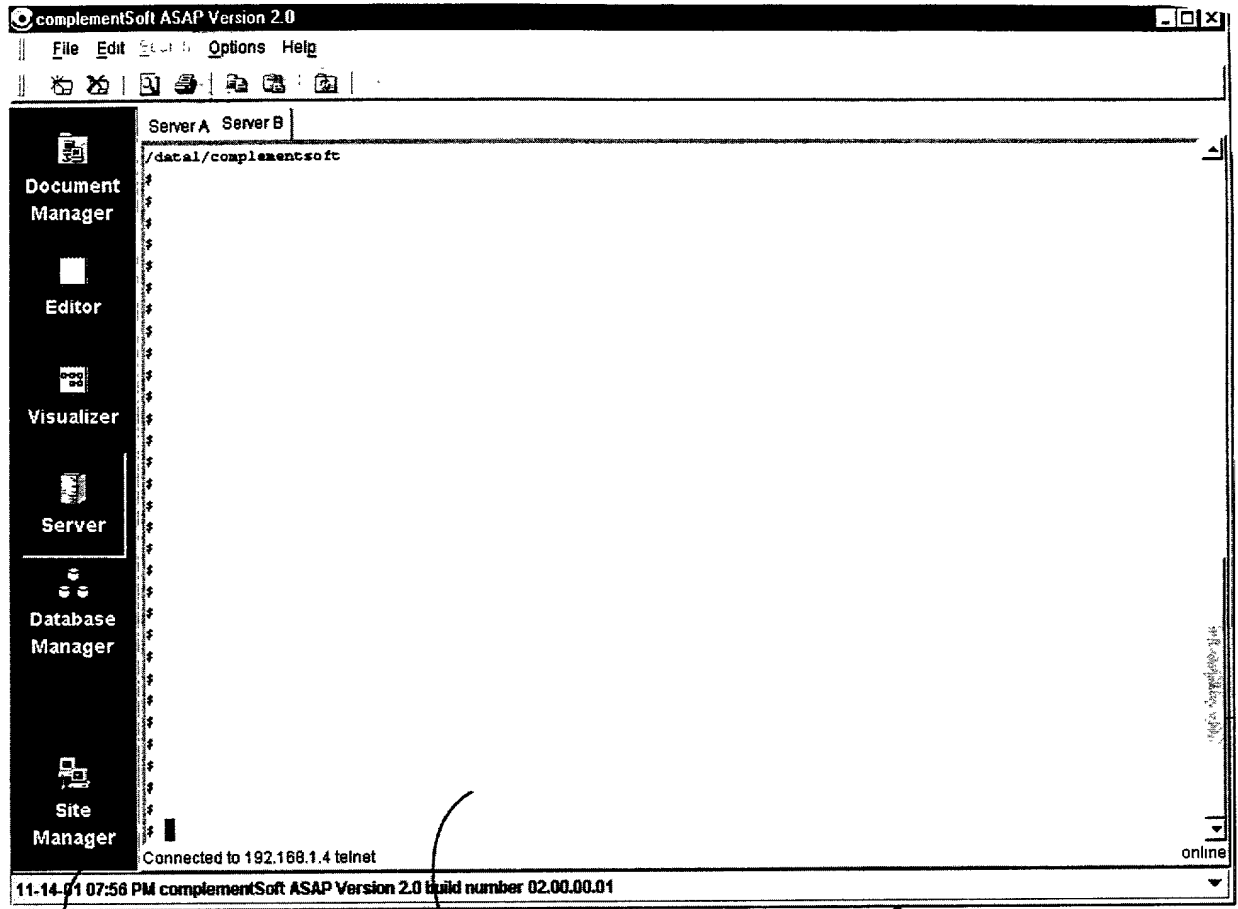
48

121

FIG. 9

120

FIG. 10



48

162

FIG. 10

160

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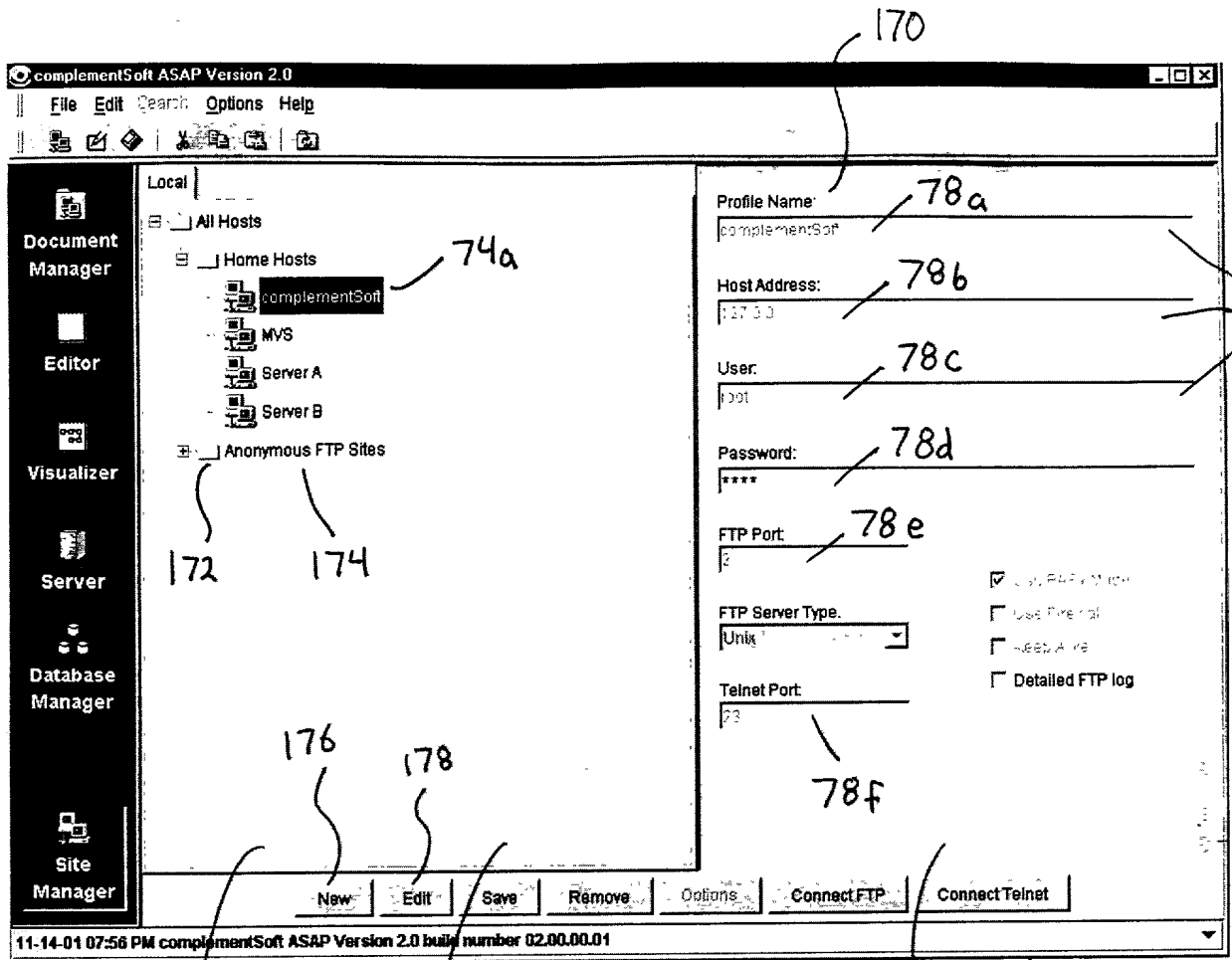
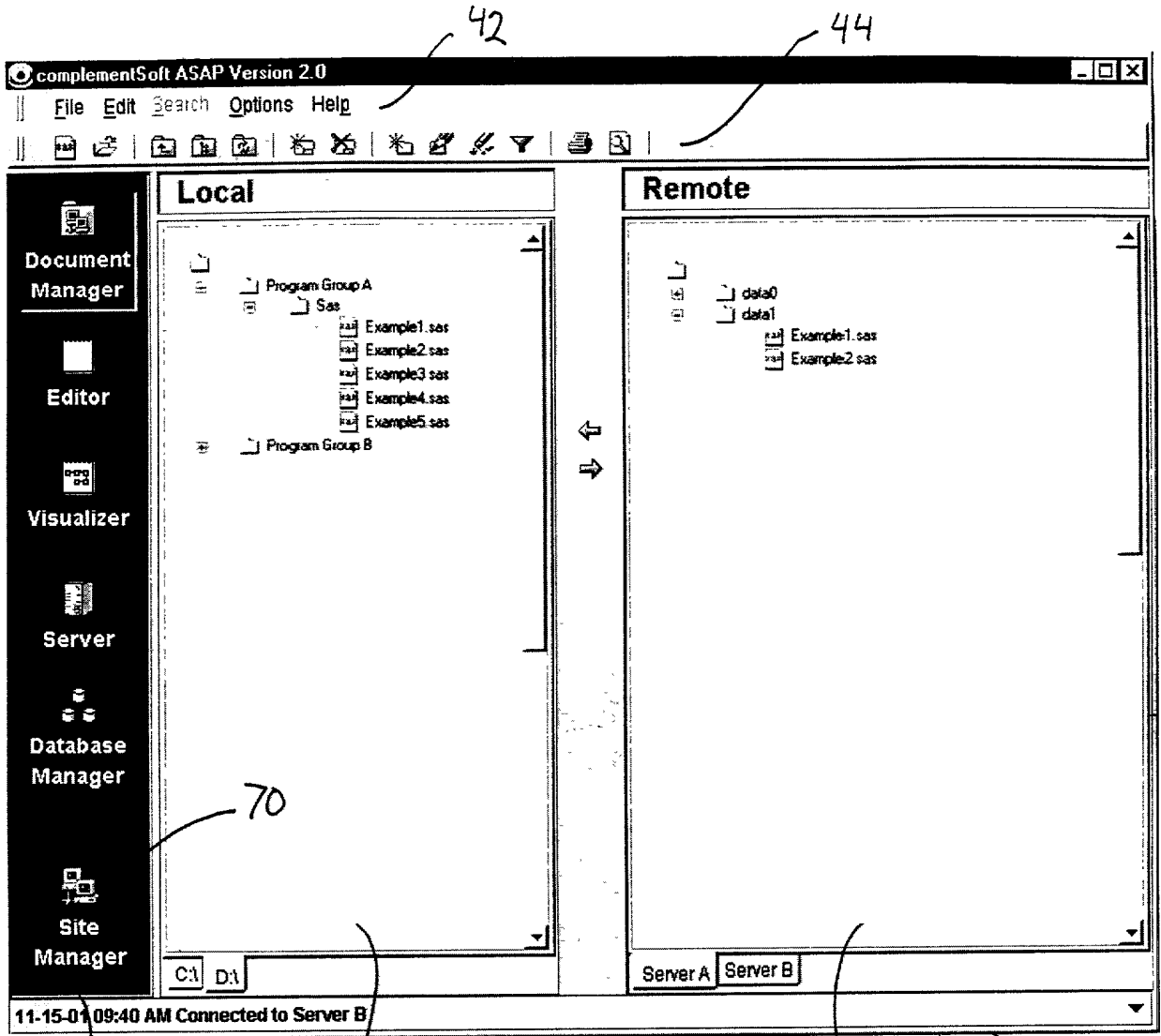


FIG. 11

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42

44

70

48

172

FIG. 12

174

60

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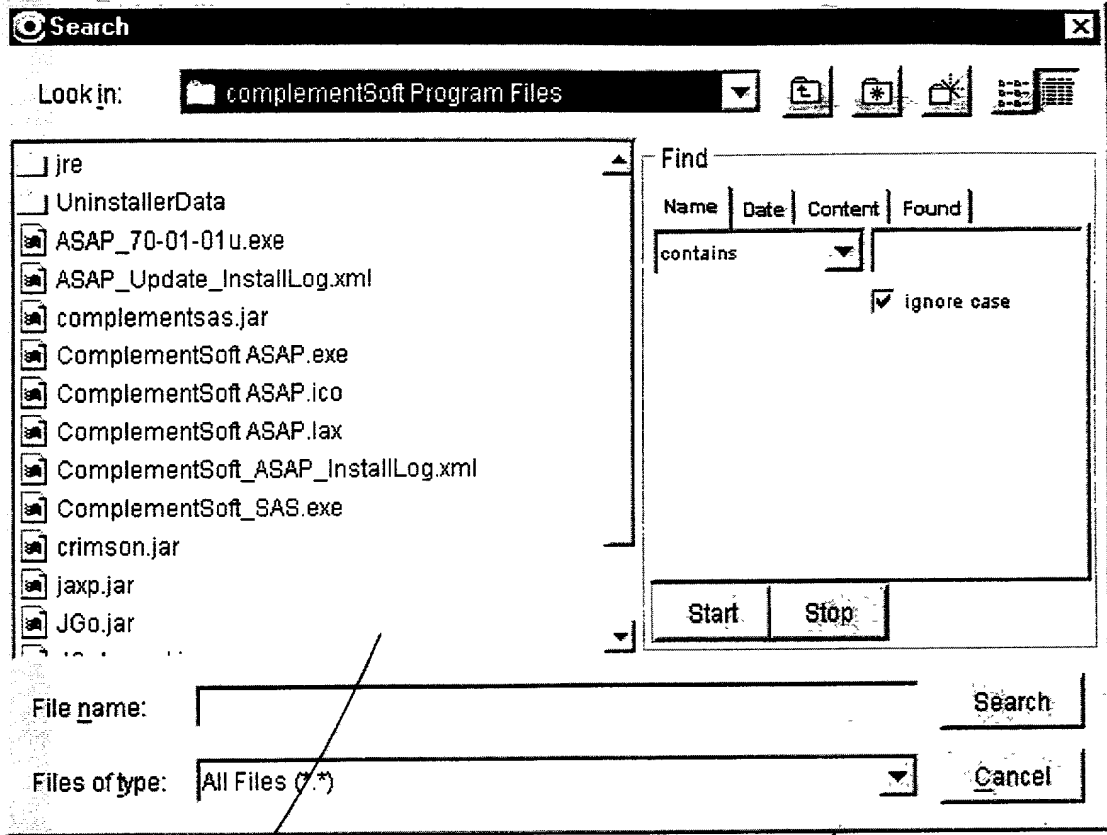


FIG. 13

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ComplementSoft ASAP Version 1.0

File Edit Search Help

Document Manager Configuration

Code

```
1  _local Configuration
2  Connection Configuration
3  Data smp1.smp1_1;
4  infile 'd:\data\complementsoft\data\smp1_1.txt';
5  input strcol1 $ strcol2 $ nbrcol;
6
7  Proc SORT out = smp1.smp1_1;
8  by strcol1;
9
10 Data _NULL_;
11 set smp1.smp1_1;
12 file 'd:\data\complementsoft\data\smp1_2.txt';
13 put strcol1 strcol2;
14
15 Data smp1.smp1_2;
16 infile 'd:\data\complementsoft\data\smp1_2.txt';
17 input strcol1 $ strcol2 $;
18
19 Proc SORT out = smp1.smp1_2;
20 by strcol1;
21
22 Data ConCat;
23 set smp1.smp1_1 smp1.smp1_2;
24 file 'd:\data\complementsoft\data\smp1_3.txt';
25 put strcol1 strcol2 nbrcol;
26
27 Data SideSide;
28 merge smp1.smp1_1 smp1.smp1_2;
29 by strcol1;
30 file 'd:\data\complementsoft\data\smp1_4.txt';
31 put strcol1 nbrcol;
32
33 Proc Print;
34 Title 'Two Sample SAS Data Sets Side by Side';
35 Run;
```

C:\Data\complementSoft Test Suite\Examples\Example 5.sas

10-24-01 09:10 PM Local execution completed

42

86

48

82

80

Document Manager

Editor

Visualizer

Server

Database Manager

Site Manager

FIG. 14a



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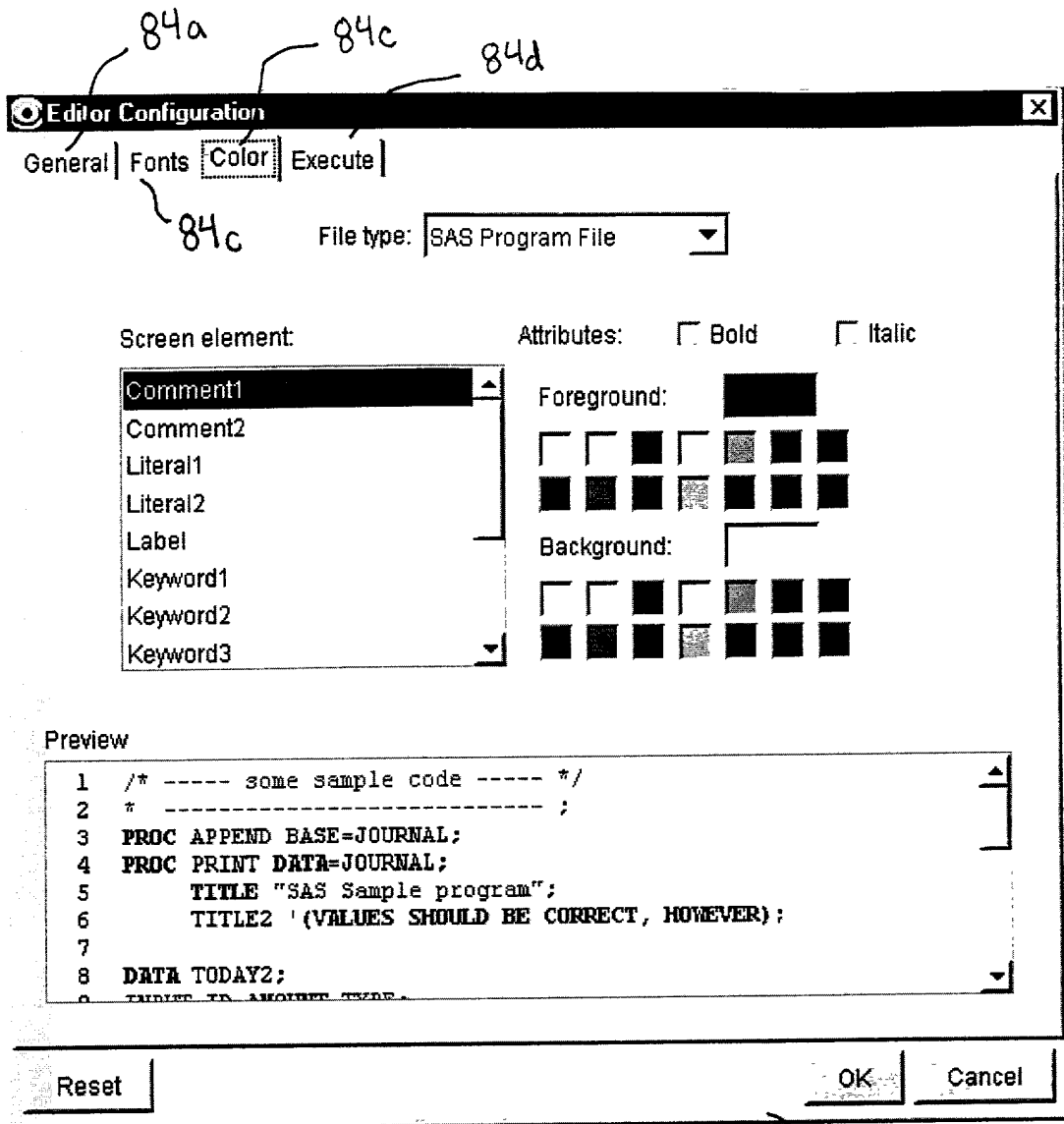


FIG. 14b

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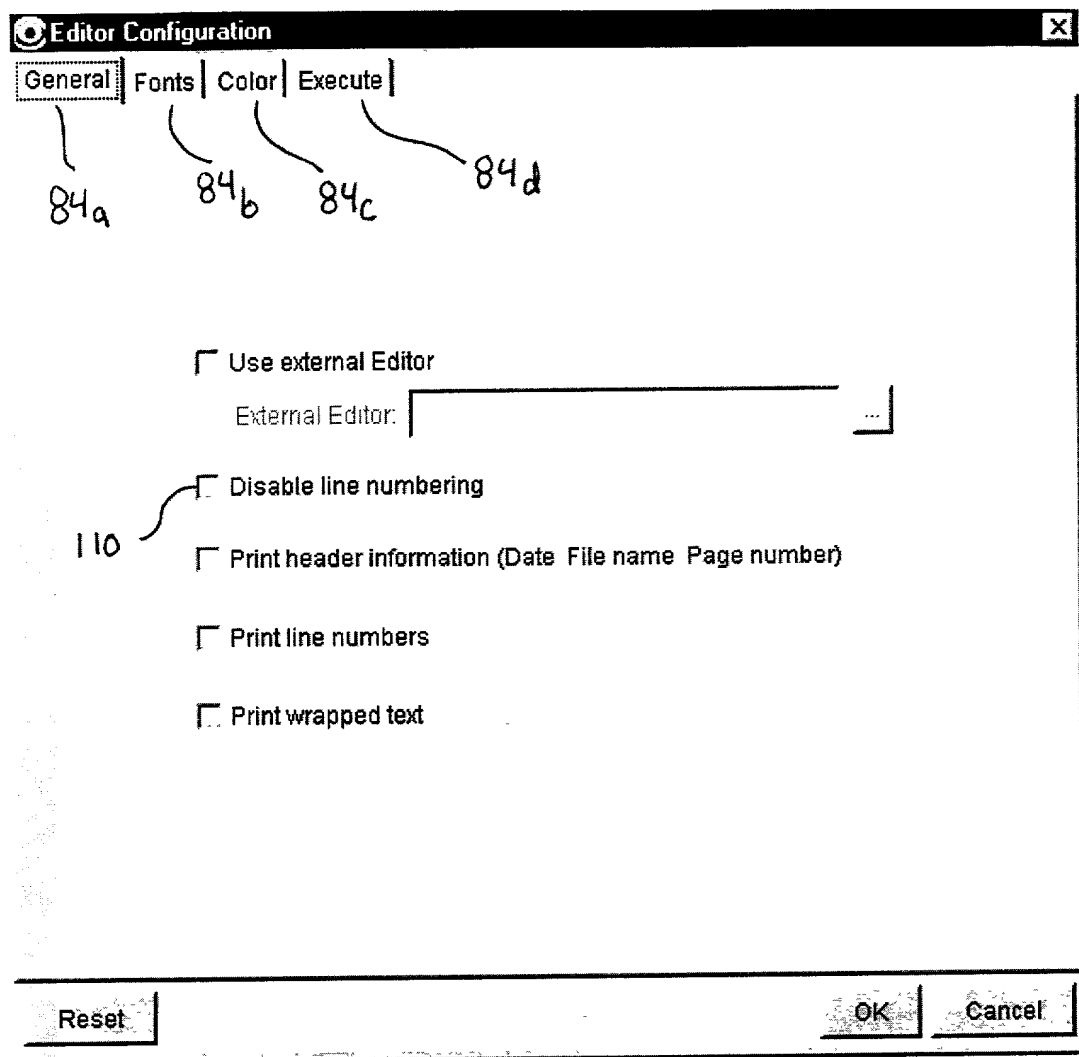


FIG. 14c

TOP SECRET 432660

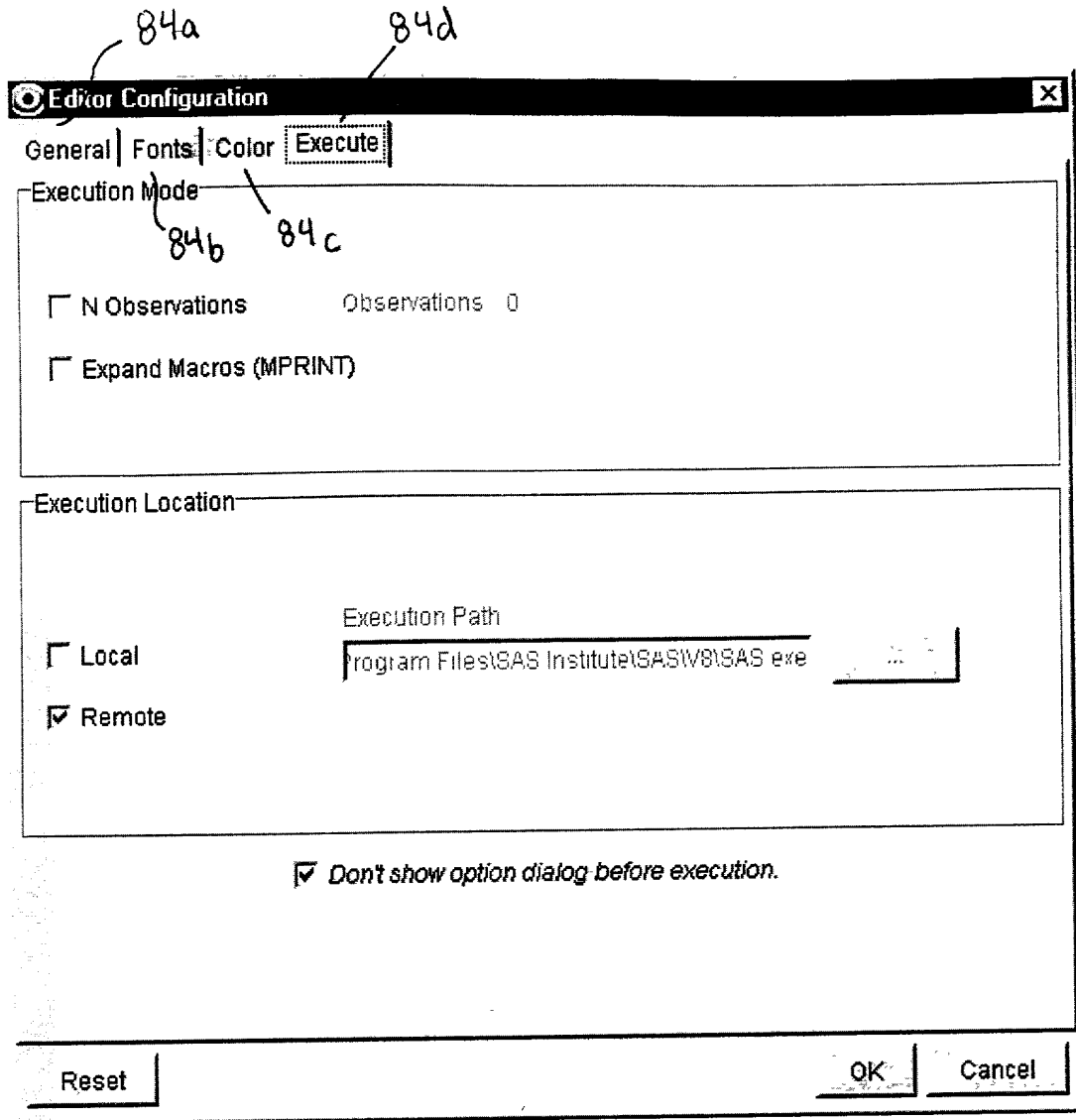
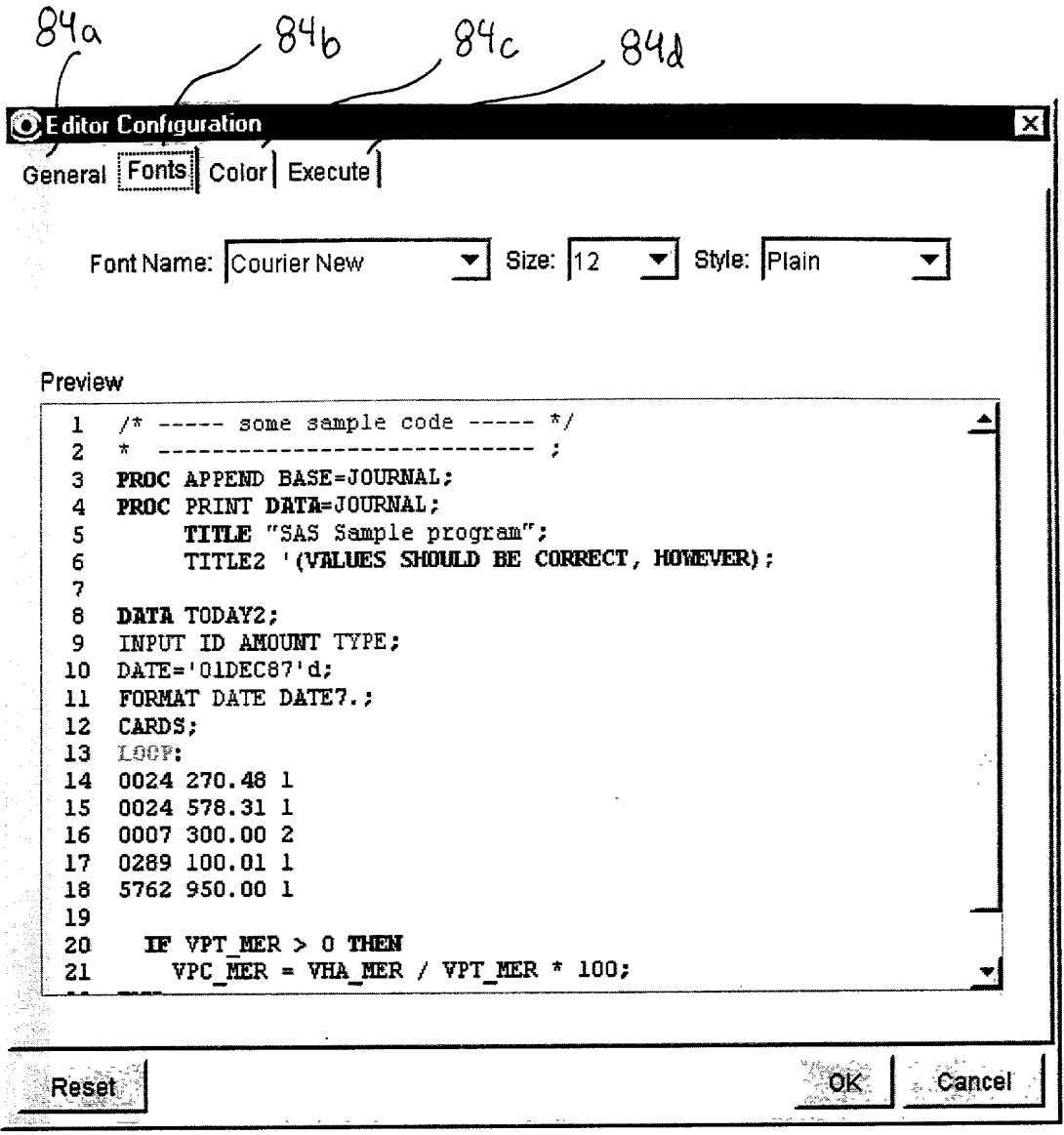


FIG. 14d

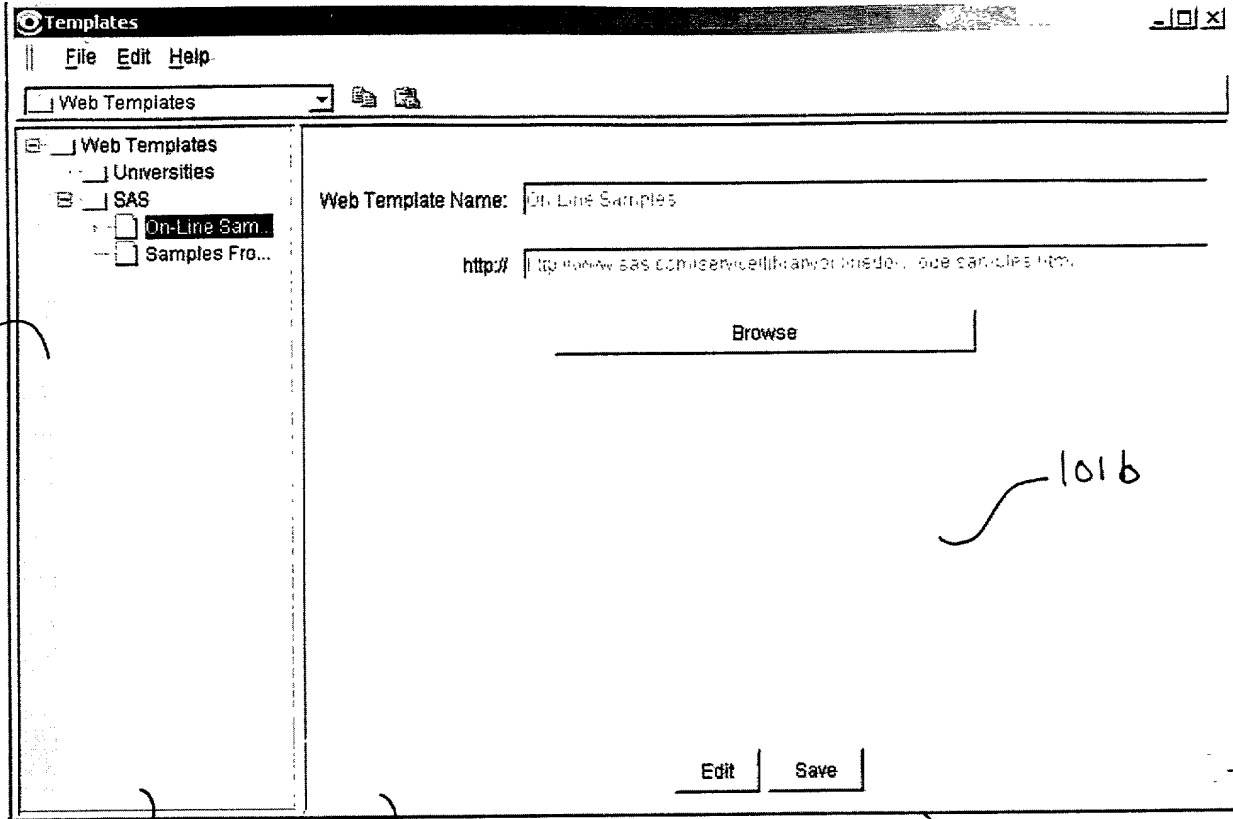


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Fig 14 e



106 107 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500



108

101a

101

FIG. 16

100

101b

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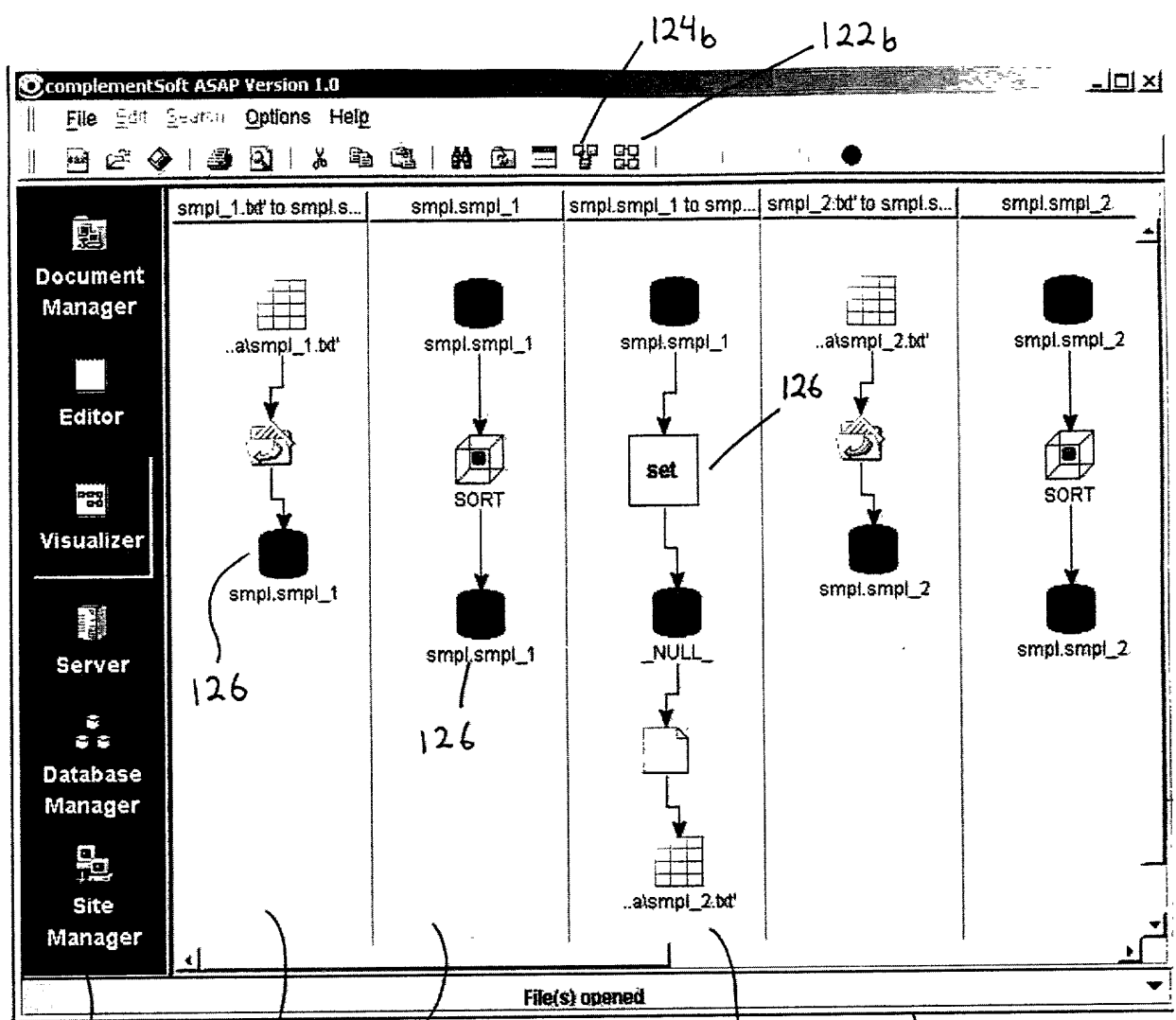
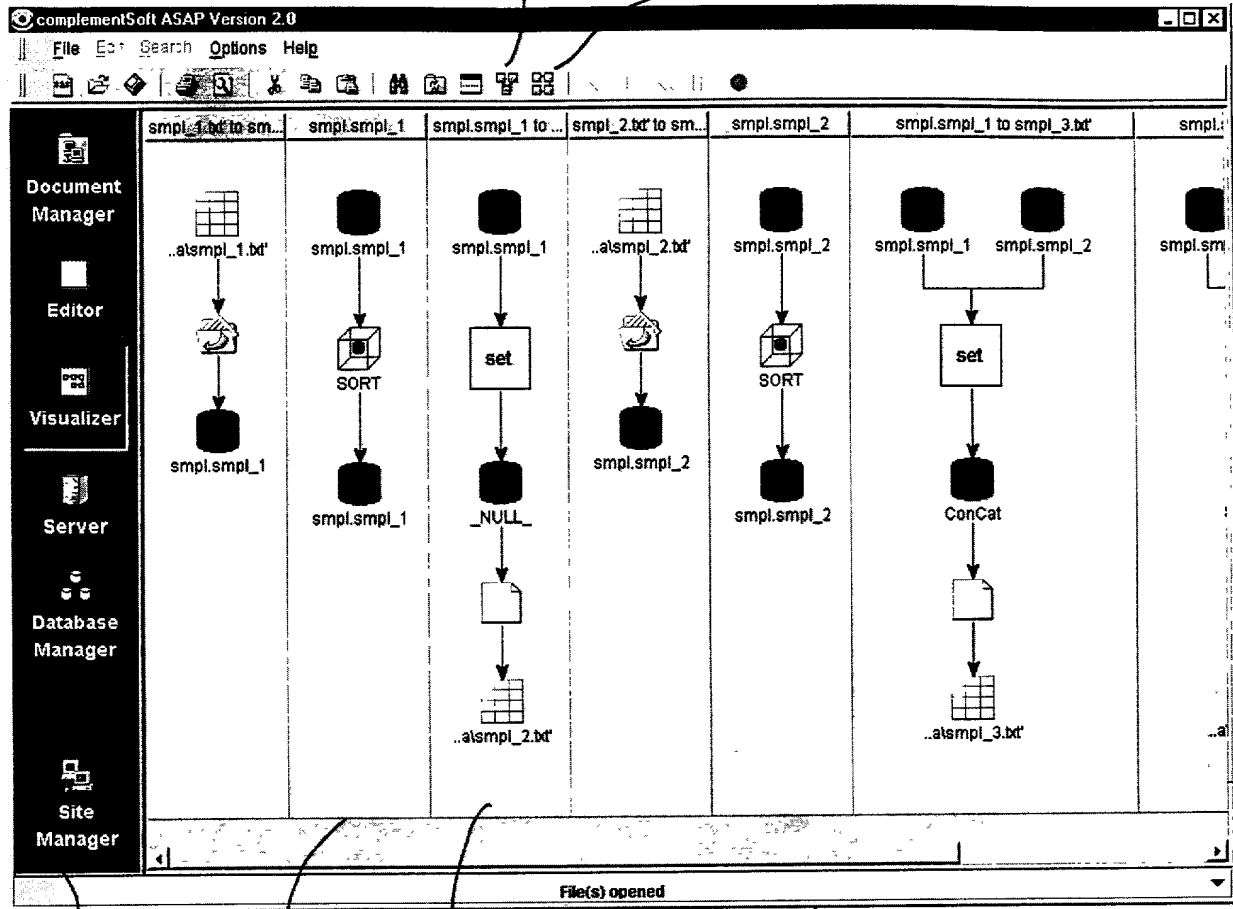


FIG. 17

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48

121

124

FIG. 18a

120



48 121 120

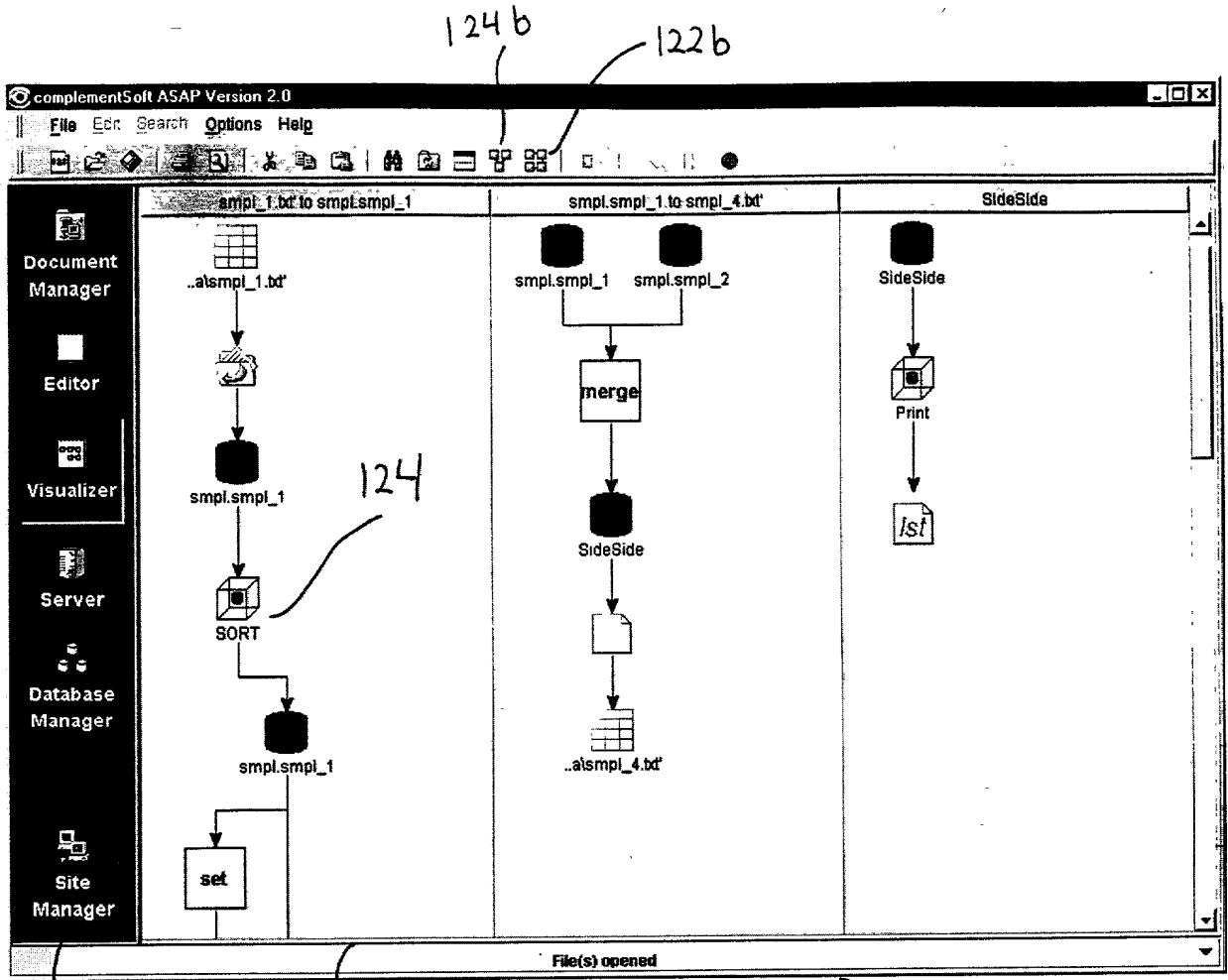


FIG. 18b



FIG. 19 is a screenshot of the complementSoft ASAP Version 2.0 interface.

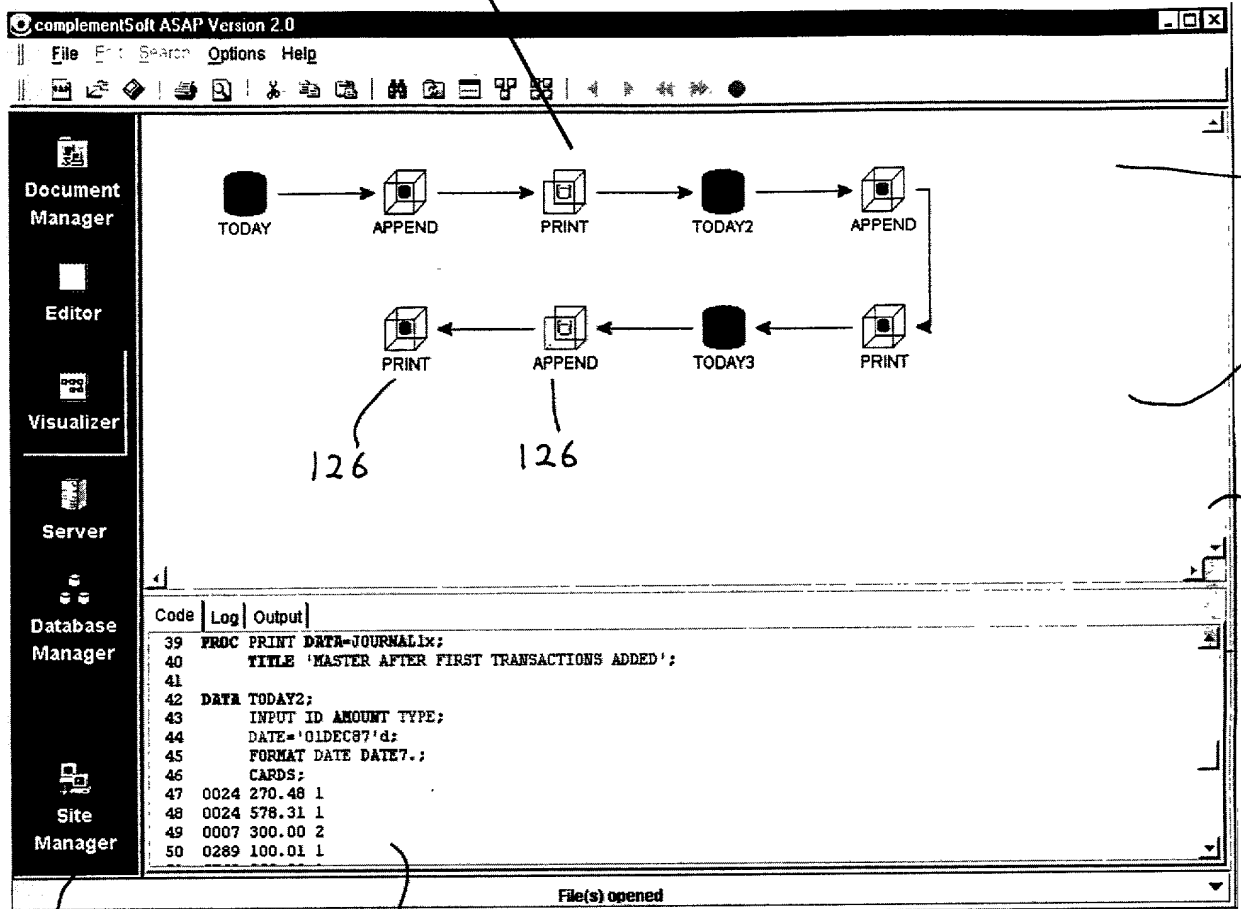
The screenshot displays the complementSoft ASAP Version 2.0 interface. On the left is a vertical navigation pane with icons and labels for Document Manager, Editor, Visualizer, Server, Database Manager, and Site Manager. The main workspace is divided into two sections. The top section contains a workflow diagram with nodes: 'smpl' (document icon), 'smpl.smpl\_1' (cylinder), 'SORT' (cube), '\_NULL\_' (cylinder), 'smpl.smpl\_2' (cylinder), 'Print' (cube), 'SideSide' (cylinder), 'ConCat' (cylinder), and another 'SORT' (cube). Arrows indicate the flow from left to right and then back to left. The bottom section is a code editor with the following text:

```
Code
1 LIBNAME smpl 'd:\data\complementsoft\library' ;
2
3 Data smpl.smpl_1;
4 infile 'd:\data\complementsoft\data\smpl_1.txt';
5 input strcol1 $ strcol2 $ nbrcol;
6
7 Proc SORT out = smpl.smpl_1;
8 by strcol1;
9
10 Data _NULL_;
11 set smpl.smpl_1;
12 file 'd:\data\complementsoft\data\smpl_2.txt';
13 put strcol1 strcol2;
14
15 Data smpl.smpl_2;
16 infile 'd:\data\complementsoft\data\smpl_2.txt';
17 input strcol1 $ strcol2 $;
18
19 Proc SORT out = smpl.smpl_2;
20 by strcol1;
```

At the bottom of the window, a status bar shows 'File(s) opened'. Handwritten annotations include '48' pointing to the navigation pane, '121c' pointing to the workflow diagram, '120' pointing to the code editor, and '122' and '121b' pointing to the right side of the window.

FIG. 19

Elements appear in red when they contain problematic code.



48

121

FIG. 20

120

122

121b

121

126

126

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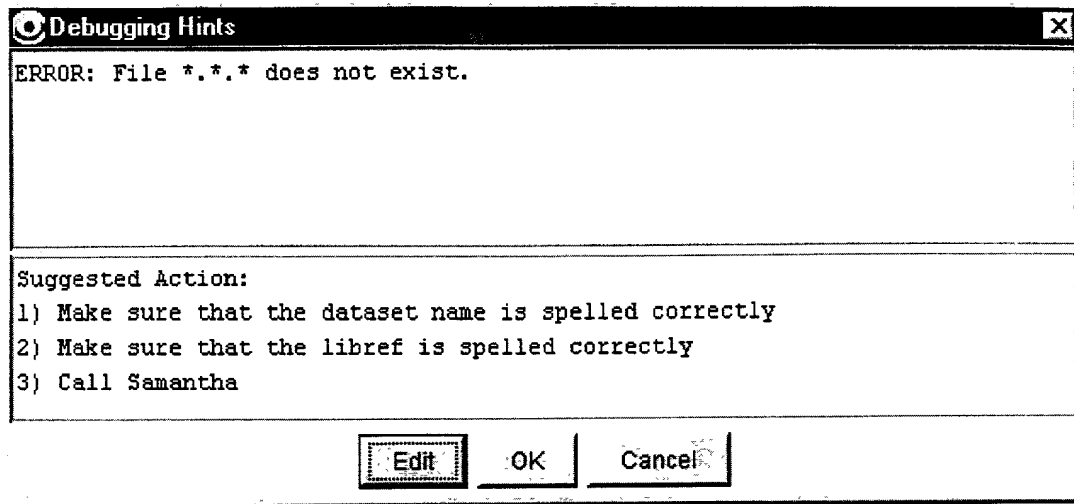


FIG. 20b

FOR "4292660"

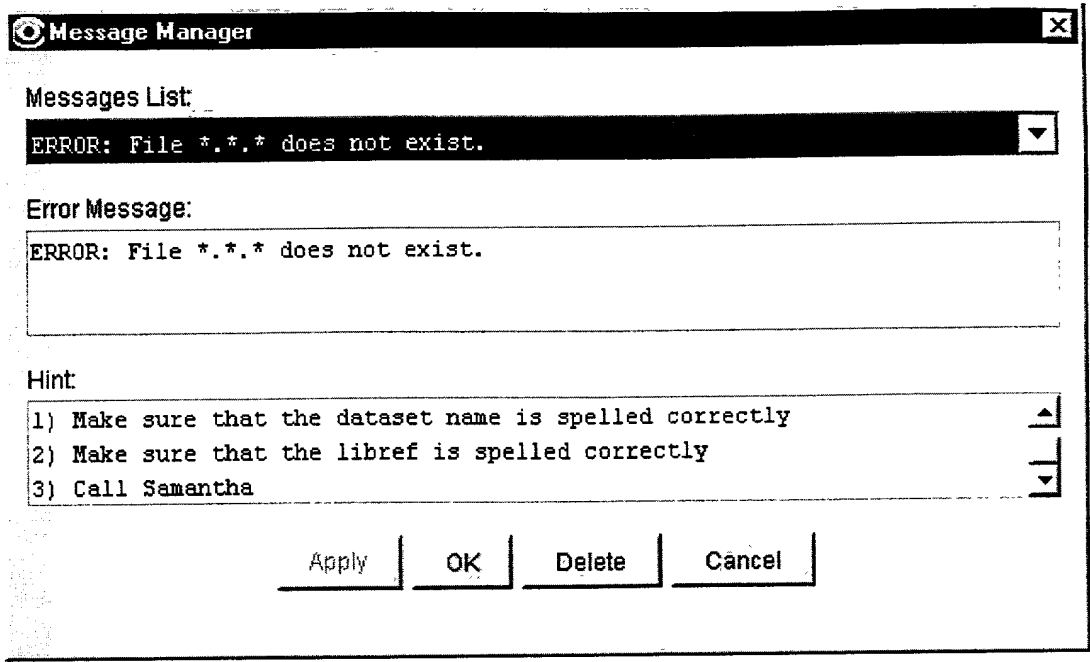


FIG. 20c

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### Document View Engine: Level I Design (class structure)

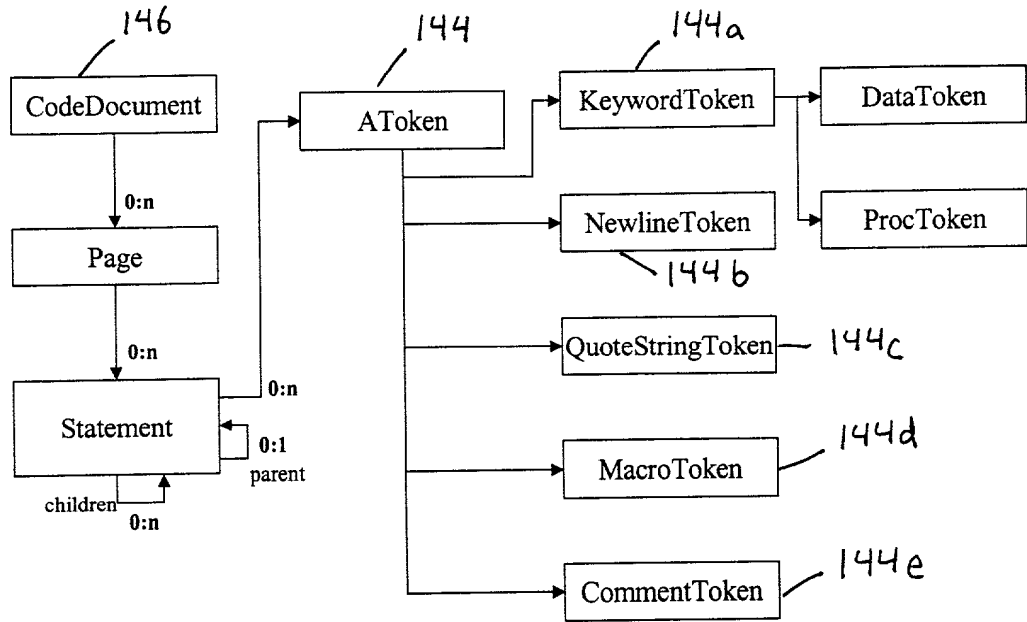


FIG. 21

446 445 444 443 442 441 440 439 438 437 436 435 434 433 432 431 430 429 428 427 426 425 424 423 422 421 420 419 418 417 416 415 414 413 412 411 410 409 408 407 406 405 404 403 402 401 400 399 398 397 396 395 394 393 392 391 390 389 388 387 386 385 384 383 382 381 380 379 378 377 376 375 374 373 372 371 370 369 368 367 366 365 364 363 362 361 360 359 358 357 356 355 354 353 352 351 350 349 348 347 346 345 344 343 342 341 340 339 338 337 336 335 334 333 332 331 330 329 328 327 326 325 324 323 322 321 320 319 318 317 316 315 314 313 312 311 310 309 308 307 306 305 304 303 302 301 300 299 298 297 296 295 294 293 292 291 290 289 288 287 286 285 284 283 282 281 280 279 278 277 276 275 274 273 272 271 270 269 268 267 266 265 264 263 262 261 260 259 258 257 256 255 254 253 252 251 250 249 248 247 246 245 244 243 242 241 240 239 238 237 236 235 234 233 232 231 230 229 228 227 226 225 224 223 222 221 220 219 218 217 216 215 214 213 212 211 210 209 208 207 206 205 204 203 202 201 200 199 198 197 196 195 194 193 192 191 190 189 188 187 186 185 184 183 182 181 180 179 178 177 176 175 174 173 172 171 170 169 168 167 166 165 164 163 162 161 160 159 158 157 156 155 154 153 152 151 150 149 148 147 146 145 144 143 142 141 140 139 138 137 136 135 134 133 132 131 130 129 128 127 126 125 124 123 122 121 120 119 118 117 116 115 114 113 112 111 110 109 108 107 106 105 104 103 102 101 100 99 98 97 96 95 94 93 92 91 90 89 88 87 86 85 84 83 82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1





# Document View Engine: Level I Design (class structure)

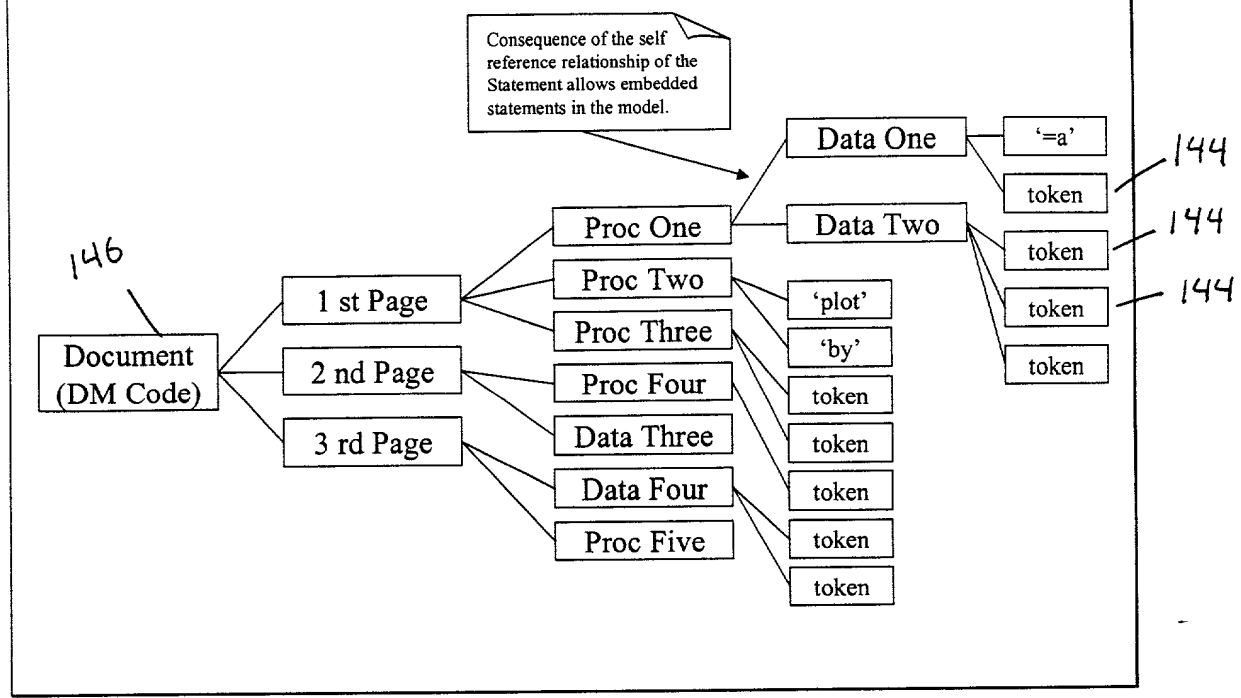
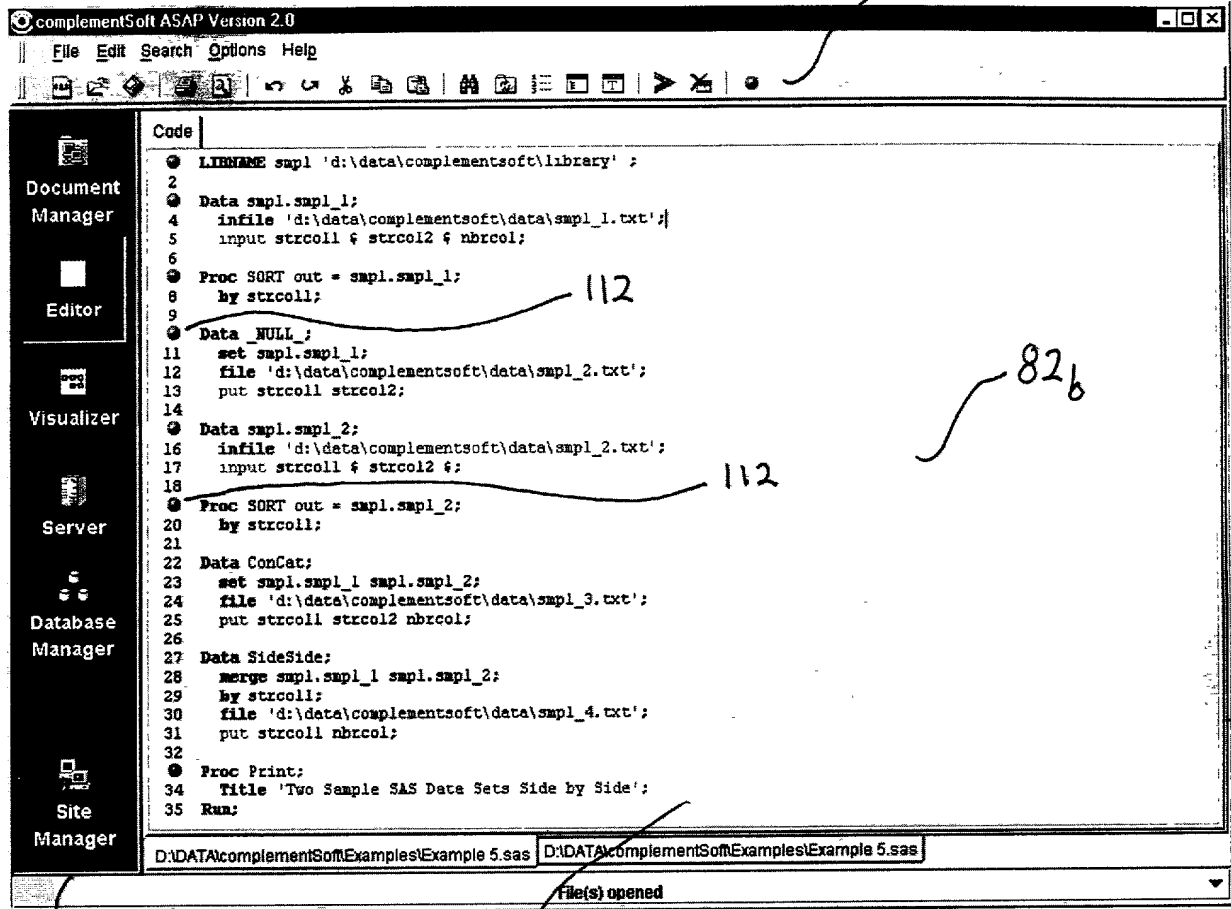


FIG. 22

FOR THE "4292660"

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48

FIG. 23

82

80